

NWF Inspection and Maintenance (I/M) Program

2015 Ozone NAAQS Moderate Ozone SIP

Technical Supporting Document (TSD)



1.0 Utah I/M Program History and General Authority

Utah SIP Section X Parts A, B, C, D, and E together with the referenced appendices continue to demonstrate compliance with the 40 CFR Section 51.352 Basic IM Performance Standard provisions for the I/M Program Requirements for Davis, Salt Lake, and Weber Counties. Part D of Section X specifically addresses Utah County. Even though it is not officially part of the NMF NAA, we have included it in this summary and the Performance Standard Modeling (PSM) because of the reciprocal arrangement with all county I/M programs. This inclusion aims to demonstrate the overall compliance of all programs providing I/M services to the NWF NAA. Utah County is not required to conduct a PSM analysis according to 40 CFR 51.350 (b)(3).

Utah Code Section 41-6-163.61[1] authorizes Utah's I/M programs, and was enacted during the First Special Session of the Utah legislature in 1983. I/M programs were initially implemented by Davis and Salt Lake counties in 1984, by Utah County in 1986, and by Weber County in 1990.

Utah Code Section 41-6-16.31[2] was amended in 1994 to authorize implementation of I/M programs stricter than minimum federal requirements in counties where it is necessary to attain or maintain ambient air quality standards. Utah Code Section 41-6-16.31[3] required preference be given to a decentralized program to the extent that a decentralized program would attain and maintain ambient air quality standards and would meet federal requirements. It also required affected counties and the Air Quality Board to give preference to the most cost-effective means to achieve and maintain the maximum benefit regarding air quality standards and to meet federal air quality requirements related to motor vehicles. The legislature indicated preference for a reasonable phase-out period for replacement of air pollution test equipment made obsolete by program in accordance with applicable federal requirements, and if such a phase-out does not otherwise interfere with attainment of ambient air quality standards.

By January 1, 2002, OBD inspections and OBD-related repairs were required as a routine component of Utah I/M programs on model year 1996 and newer light-duty vehicles and light-duty trucks equipped with certified OBD systems. The federal performance standard requires repair of malfunctions or system deterioration identified by or affecting OBD systems. In addition, in 2002, the Utah State Legislature amended Section 41-6-163.6 of the Utah Code to allow for biannual inspection of cars six years old or newer. This provision is applicable to the extent allowed under the current SIP for each county within the NAA. The state would need to determine if the I/M programs in counties within the NAA need to have their testing frequency modified to comply with

NAAQS standards. The state would then work with local health departments to alter their requirements.

In 2005, the Utah State Legislature re-numbered Section 41-6-163.6 of the Utah Code and re-codified it as Section 41-6a-1642. The Utah State Legislature also amended Section 41-6a-1642 of the Utah Code to allow I/M counties to require college students and employees who park a motor vehicle on college or university campus that is not registered in a county subject to emission inspection to provide proof of compliance with an emission inspection.

2.0 Current I/M Programs in Utah

I/M programs were adopted in the early 1980's as a required strategy to attain the ozone and CO NAAQS.[4] These programs have played a critical role in reducing emissions that contribute to ozone and CO and have been highly effective in improving air quality in urbanized parts of the state.

I/M programs in Utah are currently using OBD and tailpipe testing. However, I/M programs rely mostly on OBD testing because most of the fleet is equipped with OBD systems, but there are still some tailpipe tests that are being done.

Sections 6.5.1 through 6.5.14 contain a general summary of Utah's I/M programs. Part B, C, D, E, and F of Section X[5] of the Utah SIP provide a more specific summary of I/M programs for Cache, Davis, Salt Lake, Utah, and Weber counties. These parts also incorporate the individual county I/M ordinances/regulations and policies that provide for the enforceability of the respective I/M programs.

2.1 Network Type

I/M program's in the NWF NAA are comprised of a decentralized, test-and-repair network with approximately 585 stations throughout the NAA. The network provides tailpipe inspections in a decentralized test-and-repair network for light duty gasoline vehicles older than 1996. OBD compliant 1996 and newer model year vehicles undergo an applicable OBD inspection.

2.2 I/M program funding requirements

Counties with I/M programs will allocate funding as needed to comply with the relevant requirements specified in Utah's SIP, the Utah statutes, county ordinances, regulations, and policies; and the federal I/M program regulations. Program budgets will include funding for resources necessary to adequately:

- 1) Manage the programs conduct, covert, and overt audits including repairs;
- 2) Assist and educate inspectors, station owners, and the public;
- 3) Manage, analyze, and report data;
- 4) Ensure compliance with the program by inspectors, stations, and vehicle owners;
and
- 5) Evaluate and upgrade the programs.

All of Utah's I/M programs are funded through several mechanisms including but not limited to a fee which is collected at the time of registration by the Utah Tax Commission Division of Motor Vehicles or the county Assessor's Office. Those monies are remitted to the county in which the vehicle is registered. The collection of fees for various permitting activities and the selling inspection certificates to inspection stations are the other mechanisms. A fee schedule can be found in an appendix to each county I/M ordinance or regulation.

2.3 Government fleet

Section 41-6a-1642(1)(b) of the Utah Code requires that all vehicles owned or operated in the I/M counties by federal, state, or local government entities comply with the I/M programs.

2.4 Student and Federal Employee Vehicles

Section 41-6a-1642(8) of the Utah Code contains a provision that counties may require universities and colleges located in Utah's I/M areas to require proof of compliance with the I/M program for vehicles that are permitted to park on campus regardless of where the vehicle is registered. Vehicles operated by federal employees and operated on a federal installation located within an I/M program area are also subject to the I/M program regardless of where they are registered. Proof of compliance consists of a current vehicle registration in an I/M program area or an I/M certificate of compliance or waiver, or evidence of exempt vehicle status.

2.5 Rental Vehicles

All vehicles available for rent or use in an I/M county are subject to the county I/M program. To the extent practicable, all vehicles principally operated in the county are subject to the I/M program.

2.6 Farm truck exemption

Eligibility for the farm truck exemption from the I/M programs is specified in Section 41-6a-1642(4) of the Utah Code and must be verified in writing by County I/M program staff.

2.7 Out-of-State Exemption

Vehicles registered in an I/M County but operated out-of-state are eligible for an exemption. The owner must work with the local Health Departments to complete the registration process in Utah while living outside the state. The owner must explain why the vehicle is unavailable for inspection in Utah. Common situations include Utah citizens that are military personnel stationed outside of the state, students attending institutions of higher education elsewhere, and people serving religious assignments outside the area. If the temporary address of the owner is located within another I/M program area, the owner must submit proof of compliance with that I/M program at the time of, and as a condition precedent to, registration or renewal of registration.

2.8 Motorist Compliance Enforcement Mechanism

The I/M programs are registration-enforced on a county-wide basis. A certificate of emissions inspection or a waiver or other evidence that the vehicle is exempt from the I/M program requirements must be presented at the time of, and as a condition precedent to, registration or renewal of registration of a motor vehicle as specified in Section 41-6a-1642(1)(a) of the Utah Code. Owners of vehicles operated without valid license plates or with expired license plates are subject to ticketing by peace officers at any time. Proof of compliance consists of a current vehicle registration in an I/M program area or an I/M certificate of compliance or waiver, or evidence of exempt vehicle status.

2.9 Valid Registration

A certificate of emissions inspection or a waiver or other evidence that the vehicle is exempt from the I/M program requirements must be presented at the time of, and as a condition precedent to, registration or renewal of registration of motor vehicles as specified in Sections 41-6a-1642 and 41-1a-203(2)(b) of the Utah Code. Before registering a vehicle, an owner is required to obtain a certificate of emissions inspection, if required in the current year, as provided under Sections 41-6a-1642(1)(a) and 41-1a-203(2)(b) of the Utah Code. Owners of vehicles operated without valid license plates or with expired license plates are subject to ticketing by peace officers at any time. Registration status is also randomly checked at roadblocks and in parking lots at various locations around the state. Per Section 41-1a-402 of the Utah Code, Utah license plates indicate the expiration date of the registration. Per Section 41-1a-1303 of

the Utah Code, it is a Class C misdemeanor (infraction) for a person to drive or move, or for an owner knowingly to permit to be driven or moved upon any highway any vehicle of a type that is required to be registered in the state that is not registered in the state. Section 41-1a-1315 of the Utah Code specifies that it is a third-degree felony to falsify evidence of title and registration.

2.10 Change of Ownership

Vehicle owners are not able to avoid the I/M inspection program by changing ownership of the vehicle. Upon change of vehicle ownership, the vehicle must be re-registered by the new owner. The new owner must present an emissions certificate, waiver, or proof of exemption from the I/M program as a condition precedent to registration. The new annual registration and I/M inspection dates for the vehicle will be the date of registration.

2.11 Utah Tax Commission, and County Assessors

The Utah Tax Commission Motor Vehicle Division and County assessor will deny applications for vehicle registration or renewal of registration without submittal of a valid certificate of compliance, waiver, or verified evidence of exemption. Altered or hand-written documents are not accepted. All certificate data is collected by County I/M program auditors and subjected to scrutiny for evidence of any improprieties.

2.12 Database quality assurance

The vehicle registration database is maintained, and quality assured by the Utah Division of Motor Vehicle (DMV). Each County I/M inspection database is maintained, and quality assured by the County I/M program staff. The County I/M program has access to the DMV database and utilizes it for quality assurance purposes. All databases are subject to regular auditing, cross-referencing, and analysis. The databases are also evaluated using data obtained during roadblocks and parking lot surveys. Evidence of program effectiveness may trigger additional joint state and county enforcement activities.

2.13 Oversight Provisions

The oversight program includes verification of exempt vehicle status through inspection, data accuracy through automatic and redundant data entry for most data elements, an audit trail for program documentation to ensure control and tracking of enforcement documents, identification, and verification of exemption-triggering changes in registration data, and regular audits of I/M inspection records, I/M program databases, and the DMV database.

2.14 Enforcement staff quality Assurance

County I/M program auditors and DMV clerks involved in vehicle registration are subject to regular performance audits by their supervisors. All enforcement personnel (direct and indirect) involved in the motorist enforcement program are subject to disciplinary action, additional training, and termination for deviation from procedures. Specific provisions are outlined in the DMV procedures manual, which is available upon request. The County I/M audit policy documents are provided in their respective part of this section.

3.0 UDAQ Evaluation of Current I/M Program

UDAQ conducted basic performance standard modeling to show how the existing I/M programs of Davis, Salt Lake, and Weber counties are meeting the applicable performance standard for a basic I/M Program for the summer of 2023. The following guidance was applied: Performance Standard Modeling for New and Existing Vehicle Inspection and Maintenance (I/M) Programs Using the MOVES Mobile Source Emissions Model (EPA-420-B-22-034 Oct 2022). 2023 was chosen as an analysis year as it is the attainment year for the moderate NWF NAA for ozone. This evaluation used the same MOVES modeling assumptions used to develop the on-road mobile source 2023 projection inventory for the NWF NAA covering Davis, Salt Lake, Weber, and Utah counties. Utah County is not required to perform a basic test. However, Utah County provides reciprocity testing and there are several Utah County registered vehicles that travel into the Northern Wasatch Front, so the analysis has been included. Tooele county was not included in this analysis since the area does not meet the population threshold of 200,000 or more residents.[6]

The performance standard compares the modeling results of the existing program and performance standard benchmark for a basic program for 2023. For a basic I/M program, if the proposed or existing program achieves the same or lower emissions levels for VOC and NO_x as the performance standard benchmark program, then the proposed or existing program is considered to have met the basic performance standard. Areas required to operate an I/M program as the result of being classified (or reclassified) as moderate for an 8-hour ozone NAAQS must use the basic performance standard, using the program design elements at 40 CFR § 51.352(e). Emission estimates are confined to the EPA approved MOVES 3.0.3 (Motor Vehicle Emission Simulator). This model produces emissions daily estimates for on-road vehicles by providing emissions profiles for starts, exhaust, evaporative, and hot soak conditions. Inputs include:

- Speeds;

- Vehicle fuel profiles and specification;
- VMT;
- I/M profiles;
- VMT mix;
- Vehicle age distributions; and
- Meteorological conditions.

These inputs were chosen to meet EPA and Department of Transportation guidance on updating local planning assumptions every 5 years.[7]

Compliance factors were compiled utilizing local 2017 I/M EPA data covering:

- Total Vehicles tested;
- Total Failures;
- Waivers; and
- Failure Rate for the following testing procedures:
- Two Speed Idle;
- OBD; and
- Gas Cap.

The compliance data is from EPA prepared compliance data dated 2/21/2019. Since this modeling exercise had been completed, 2020 I/M testing compliance factors have become available (EPA prepared compliance data dated 8/12/2021)[8]. The only difference between the 2017 I/M and 2020 I/M compliance factors is in Weber County for light duty trucks model years 1996-2007 creating a difference of 1%. Each county specific I/M program were input within MOVES 3.0.3 and the outputs are included in the Table 1 to Table 4. Specific county I/M program details such as compliance rates and compliance factors can be found in the 2023 Existing Basic Inspection and Maintenance Performance Standard Modeling Technical Support Document. [9]

Table 1: 2023 Davis County Summer Basic Performance Modeling

2023 Davis County Summer Basic Performance Modeling (Tons Per Day)		
	NO _x	VOC

Davis County I/M	7.42	2.77
Basic I/M	7.55	2.91
Difference	0.14	0.13

Table 2: 2023 Salt Lake County Summer Basic Performance Modeling

2023 Salt Lake County Summer Basic Performance Modeling (Tons Per Day)		
	NO _x	VOC
Salt Lake County I/M	20.98	8.51
Basic I/M	21.42	8.94
Difference	0.44	0.43

Table 3: 2023 Utah County Summer Basic Performance Modeling

2023 Utah County Summer Basic Performance Modeling (Tons Per Day)		
	NO _x	VOC
Utah County I/M	10.39	3.37
Basic I/M	10.56	3.48
Difference	0.16	0.12

Table 4: 2023 Weber County Summer Basic Performance Modeling

2023 Weber County Summer Basic Performance Modeling (Tons Per Day)		
	NO _x	VOC
Weber County I/M	5.87	2.12
Basic I/M	5.97	2.22
Difference	0.11	0.10

The analysis provided in this section, with the results highlighted in tables 59 – 62, indicates that the existing I/M programs currently in place in the NWF meet the CAA requirements for moderate ozone NAAs.

4.0 Implementation of I/M Program in Tooele County

To determine if the implementation of an I/M program in the one county included in the NWF NAA that does not currently have an I/ IM program, Tooele County, UDAQ conducted an analysis of the effects of implementing an I/M program in the county using MOVES parameters similar to those of the UDAQ's other on-road modeling. Tooele county is a small county with a population of only approximately 76,000 residents, and only a portion of the total county is included within the boundary of the NWF NAA. The results of this analysis are shown in Table 5. Based on these results, the UDAQ has concluded that the emission reductions associated with implementing a Basic I/M program in Tooele County would yield minimal emission reductions. Thus, the UDAQ has decided not to implement an I/M program in Tooele County especially in light of the fact that the county does not meet the population requirements found in 40 CFR § 51.350(a)(3), and the associated emission reductions would be small relative to the size of the program. This determination does not exclude the possibility of an I/M program implemented in Tooele County at a later date.

Table 5: I/M Program Implementation Evaluation for Tooele County in 2023

	NO _x	VOC	VOC Refuel	NH ₃	PM _{2.5}	Vehicle Miles Traveled
No I/M	3.783	0.875	0.13	0.097	0.081	3,476,298
OBD I/M	3.74	0.833	0.13	0.097	0.081	3,476,298

Percentage Emission Reduction	-1.14%	-4.80%	0.00%	0.00%	0.00%	0.00%
TPD Emission Reduction	-0.043	-0.042	0	0	0	0

References:

- [1] This section has been renumbered as section 41-6a-1642 by Laws 2005, c. 2, § 216, eff. Feb. 2, 2005.
- [2] 1994 Utah Code.
- [3] Citation is to the 1994 Utah Code.
- [4] Davis, Salt Lake, Utah, and Weber counties are required to have I/M programs under Section 182(b)(4) and/or Section 187(a)(4) of the CAA.
- [5] <https://deq.utah.gov/air-quality/sections-state-implementation-plan-sip>
- [6] 40 CFR § 51.350(a)(2) and (a)(3).
- [7] EPA420-B-08-901 Dec 2008
- [8] <https://www.epa.gov/compliance-and-fuel-economy-data/annual-certification-data-vehicles-engines-and-equipment>
- [9] Utah's 2023 Existing Basic Inspection and Maintenance Performance Standard Modeling Technical Support Document can be found on the NWF Moderate Ozone SIP TSD web page at <https://deq.utah.gov/air-quality/northern-wasatch-front-moderate-ozone-sip-technical-support-documentation#supporting-tsd>.

